

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 22 August 2000 (22.08.00)	Applicant's or agent's file reference TEXE/P22039PC
International application No. PCT/GB99/04103	Priority date (day/month/year) 09 January 1999 (09.01.99)
International filing date (day/month/year) 06 December 1999 (06.12.99)	
Applicant ARNOLD, Brian	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

21 June 2000 (21.06.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Juan Cruz
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

ERIC POTTER CLARSON
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European Patent Office
Directorate General 2
Erhardtstraße 27
D-80298 München
GERMANY

8 January 2001

Sent by fax

Dear Sirs

International Patent Application No. PCT/GB/99/04103
TEXON UK LIMITED
Our ref: TEXE/P22039PC

This is a response to the Written Opinion dated 9 October 2000. We enclose new claims 1-17 which are to be substituted for claims 1-21 as currently on file.

New claims 1-16 correspond with original claims 3-18, but the claim dependencies have been appropriately amended. New claim 17 corresponds with previous claim 21 but includes an additional numerical limitation. It was indicated in paragraph 3 of item V that original claims 3-18 seem to meet the requirements of Article 33PCT with respect to the available prior art and we therefore submit that amended claims 1-16 likewise meet the requirements of Article 33PCT. Claim 17 now relates to claims 1-16 which were previously indicated to be acceptable under Article 33PCT and furthermore includes an additional limitation to further clarify the claim. It is therefore submitted that amended claim 17 likewise meets the requirements of Article 33 PCT.

The amendment of the claims has dealt with item VIII, paragraph 1. Regarding item VIII, paragraph 2 is not understand: it would appear that the observation in paragraph 2 relates to original claim 1 not to original claim 3. Regarding item VIII, paragraph 3 it is submitted that the amendments to the claims and in particular to claim 17 deal with this objection.

cont/....

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In view of the amendments to the claims, an amendment to page 3 of the application has also been made, for consistency.

Although the applicant has decided to amend the claims, the applicant does not agree with the Examiner's comments regarding US-A-3973284. This document does not disclose a material suitable for use in the manufacture of a shoe stiffener consisting of a layer of stiffener composition between two layers of sheet material, as indicated by the Examiner; this is because the layer 26 is not in fact a layer of sheet material but is merely a layer of granules which can in no way be regarded as a "sheet material". Furthermore, US-A-3973284 does not disclose a material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, as called for in amended claim 1 but discloses the application of a layer of molten stiffening material directly to a shoe upper. As can be seen from Figure 5 of US-A-3973284, the layer 10 onto which the molten stiffener composition is applied as a layer 14 (see Figure 1) is the outer component of a shoe upper. The item 28 is stated to be a liner (subsequently referred to in US-A-3973248 as lining 42). From this it is clear, in conjunction with Figure 5, that the product manufactured is US-A-3973284 is not a shoe stiffener as such (or, at least, not a shoe stiffener to which the present invention relates) but is a shoe upper stiffened by the application of a molten stiffening material directly to the shoe upper to make the stiffened shoe. Direct application of a molten stiffener material to a shoe upper has its own considerable problems and the purpose of the present invention is to provide a separate material from which shoe stiffeners can be produced for subsequent application to a shoe upper as discussed in the present application.

US-A-4308673 is also clearly distinct from the present invention insofar as that document discloses a product which is similar to that, already known to the skilled person, described in the present application in the paragraph bridging pages 1 and 2 of the application, namely a shoe stiffener which consists of a textile fabric impregnated with a heat softenable stiffener material and coated on one surface with a hot-melt adhesive layer. Likewise this product does not have the characteristics specified in the

cont/....

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claims of the present application.

It is our submission that the claims, as amended, meet the patentability requirements over the documents referred to by the Examiner and meet the other requirements of patentability, likewise.

Yours faithfully]
ERIC POTTER CLARKSON

Martin J Gilding

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Enc: Replacement pages 3 and 13-15 (x 3)

In another aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².

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The polymeric material is flowable under pressure at said elevated temperature such that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.

Size ranges where referred to herein refer to linear dimensions; thus the areas of the openings in said layer of sheet material range, approximately between about 0.02 sq mm and 25 sq mm.

In a preferred material in accordance with the invention the elevated temperature is in the range from 60°C to 80°C, more preferably about

CLAIMS

1. A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material,
5 the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from
10 0.15 mm² to 5 mm².
2. A material according to claim 1 wherein the elevated temperature is in the range from 60°C to 80°C.
- 15 3. A material according to either one of claims 1 and 2 wherein the melt viscosity of the polymeric material at 100°C is in the range from 900 Pas to 2500 Pas.
4. A material according to any one of the preceding claims wherein
20 the openings have a size range from 0.3 mm² to 1.5 mm².
5. A material according to any one of the preceding claims wherein the shoe stiffener material is from 0.4mm up to 2.00mm in thickness.
- 25 6. A material according to any one of the preceding claims wherein the stiffener composition comprises between 85% and 30% by weight of said polymeric material and 15% and 70% by weight of particulate filler.
7. A material according to claim 6 wherein the particulate filler has a

size between 50 microns and 500 microns.

8. A material according to claim 7 wherein the size of the particulate filler is between 100 microns and 400 microns.

5

9. A material according to any one of claims 6 to 8 wherein the filler is mica.

10. A material according to any one of claims 6 to 8 wherein the filler is talc.

10

11. A material according to any one of the preceding claims wherein the polymeric material comprises polycaprolactone.

12. A material according to any one of claims 1 to 10 wherein the polymeric material comprises poly(tetramethylene-adipate).

15

13. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a woven fabric.

20

14. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a knitted fabric.

15. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is an apertured non-woven fabric.

25

16. A shoe stiffener comprising a material in accordance with any one of the preceding claims.

17. A method of incorporating a shoe stiffener according to claim 16 with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face contact with the upper component, before or after said positioning heating the stiffener to a temperature between 50°C and 90°C at which the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

WRITTEN OPINION

(PCT Rule 66)

To:

GILDING, MARTIN J.
ERIC POTTER CLARKSON
Park View House
58 The Ropewalk
Nottingham NG1 5DD
GRANDE BRETAGNE

Date of mailing
(day/month/year) 09.10.2000

Applicant's or agent's file reference
TEXE/P22039PC

REPLY DUE within 3 month(s)
from the above date of mailing

International application No.
PCT/GB99/04103

International filing date (day/month/year)
06/12/1999

Priority date (day/month/year)
09/01/1999

International Patent Classification (IPC) or both national classification and IPC
A43B23/17

Applicant
TEXON UK LIMITED et al.


1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain document cited
 - VII ☒ Certain defects in the international application
 - VIII ☒ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 09/05/2001.

Name and mailing address of the international preliminary examining authority:
 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
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Authorized officer / Examiner

Herry-Martin, D

Formalities officer (incl. extension of time limits)
Ghellere, M
Telephone No. +49 89 2399 2053



I. Basis of the opinion

1. This opinion has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-21 as originally filed

Drawings, sheets:

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,2,19-21
Inventive step (IS)	Claims	2
Industrial applicability (IA)	Claims	

2. Citations and explanations

see s parate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. As far as the examiner can understand the subject-matter to be claimed with respect to the description and the drawings (see objections section VIII), it appears that the independent claim 1 does not satisfy the criterion set forth in Article 33(2) PCT because its subject-matter is not new in respect of prior art defined in the regulations (Rule 64(1)-(3) PCT).

Document US-A-3 973 284 (see description column 2, line 22 to column 3, line 31 and the drawing) discloses a material suitable for use in the manufacture of a shoe stiffener consisting of a layer of stiffener composition (14) between two layers of sheet material (26,28), the stiffener composition including a polymeric material which is stiff at ambient temperature and is pliable, adhesive and flowable under pressure at an elevated temperature and at least one (26) of the layers of sheet material having openings therein of such a size that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials (10) whereby to bond the stiffener in the shoe.

See also document US-A-4 308 673.

2. Dependent claim 2 does not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT).

In claim 2 more informations about the material of claim 1 are given which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can be readily contemplated in advance. See also document US-A-3 973 284.

3. Claims 3-18 seem to meet the requirements of Article 33 PCT with respect to the available prior art.
4. Claim 19 does not satisfy the criterion set forth in Article 33(2) PCT because its subject-matter is not new in respect of prior art defined in the regulations (Rule 64(1)-(3) PCT).

Document US-A-3 973 284 (see description column 2, line 22 to column 3, line 31 and the drawing) discloses a method of making a material comprising procuring two layers (26,28) of sheet material, at least one (26) having openings therein, introducing a layer of a stiffener composition (14) between the layers of sheet material and treating the layers to cause them to adhere to one another without the stiffener composition leaking through the openings.

5. Claim 20 does not satisfy the criterion set forth in Article 33(2) PCT because its subject-matter is not new in respect of prior art defined in the regulations (Rule 64(1)-(3) PCT).

Document US-A-3 973 284 (see description column 2, line 22 to column 3, line 31 and the drawing) discloses a method wherein the layer of stiffener composition (14) is introduced between the layers of sheet material (26,28) by extruding it and wherein the layers are treated by pressing and cooling.

6. As far as the examiner can understand the subject-matter to be claimed with respect to the description and the drawings (see objections section VIII), it appears that the independent claim 21 does not satisfy the criterion set forth in Article 33(2) PCT because its subject-matter is not new in respect of prior art defined in the regulations (Rule 64(1)-(3) PCT).

Document US-A-3 973 284 (see description column 2, line 22 to column 3, line 31 and the drawing) discloses a method of incorporating a shoe stiffener with a shoe

upper component (10) comprising positioning the stiffener (14) with one layer (26) of sheet material with openings therein in face-to-face contact with the upper component, before or after said positioning heating the stiffener (14) to such an extent that the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition (14) through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

Re Item VII

Certain defects in the international application

1. The requirements of Rule 6.3 b) PCT are not fulfilled because the independent claims are not properly cast in the two part form, with those features which in combination are part of the prior art being placed in the preamble.
2. The requirements of Rule 6.2(b) PCT are not fulfilled because the features of the claims are not provided with reference signs placed in parentheses.
3. The requirements of Rule 5.1(a)(ii) PCT are not fulfilled because the documents US-A-3 973 284 and US-A-4 308 673 are not identified in the description and the relevant background art disclosed therein is not briefly discussed.

Re Item VIII

Certain observations on the international application

1. The various definitions of the invention given in independent claims 1 and 3 on the one hand, and 3 and 21, on the other hand, are such that the claims as a whole are not clear and concise, contrary to Article 6 PCT. The claims should be recast to include only the minimum necessary number of independent claims in any one category, with dependent claims as appropriate.

In the present case it is considered appropriate to use only one independent claim for the material and one independent claim for the method.

2. Claim 3 does not meet the requirements of Article 6 PCT, because it is not clear.

Claim 3 attempts to define the subject-matter in terms of the result to be achieved, namely being stiff at ambient temperature and being pliable, adhesive and flowable under pressure at an elevated temperature, and causing sufficient of the polymeric material to flow through the openings in the sheet material and adhering to adjacent shoe upper materials, which merely amounts to a statement of the underlying problem. The technical features necessary for achieving this result should be added.

3. Claim 21 does not meet the requirements of Article 6 PCT, because it is not clear.

See the afore-mentioned grounds point 2.

Translation
09/869451

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PF980095	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR99/03319	International filing date (<i>day/month/year</i>) 30 December 1999 (30.12.99)	Priority date (<i>day/month/year</i>) 31 December 1998 (31.12.98)
International Patent Classification (IPC) or national classification and IPC H01Q 5/00, 21/20, 3/26, 3/24		
Applicant THOMSON MULTIMEDIA		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>2</u> sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 27 June 2000 (27.06.00)	Date of completion of this report 26 March 2001 (26.03.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR99/03319

I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

- ☐ the international application as originally filed.
- ☒ the description, pages 1-12, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. _____, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. 1-9, filed with the letter of 10 January 2000 (10.01.2000),
 Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/6-6/6, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR 99/03319

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-9	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-9	NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents, cited in the international search report:

D1: US-A-4 980 692 (RUDISH RONALD M ET AL) 25

December 1990 (1990-12-25)

D4: US-A-4 605 932 (BUTSCHER FRANK D ET AL) 12

August 1986 (1986-08-12)

D5: EP-A-0 512 487 (ALCATEL ESPACE) 11 November 1992
(1992-11-11).

2. The solution proposed in Claim 1 of the present application is not considered inventive (PCT Article 33(3)), for the following reasons:

Document **D5** (abstract and Figures **1 and 2**), which is considered the closest prior art, describes a telecommunication device with electronic scanning arrays comprising M alignments of radiating sources (13) arranged along a generatrix (12) of a surface of revolution, and a switch coupling said M alignments to N lines of a divider/combiner network ($N < M$), said switch being capable of feeding N adjacent alignments at a given moment (column 6, lines **24-26**). The device according to **D5** further

comprises a phase shifter connected to each radiating element generatrix, and a controller for controlling the switch and the phase shifters in order to adjust the radiation pattern resulting from said N alignments in a first azimuth direction and a second elevation direction, respectively (column 3, lines 3-20).

The device that is the subject matter of Claim 1 differs from that disclosed in D5 in that it comprises phase shifters positioned between the radiating sources of a single generatrix. However, this technical feature does not appear to have any technical effect or advantage relative to the device of D5, which has a single phase shifter per generatrix, enabling the elevation pattern of the antenna to be adjusted by controlling said phase shifters. On the contrary, the device according to D5 appears to be simpler and more advantageous, since it reduces the number of controls needed (one per generatrix) relative to the antenna of Claim 1, which requires one control per radiating element (see column 3, lines 36-44 and column 5, lines 45-56). For this reason, Claim 1 does not involve an inventive step (PCT Article 33(3)) over D5.

4. Dependent Claims 2-9 do not contain any feature which, in combination with the features of any one of the claims to which they refer, might define subject matter that meets the PCT requirements of inventive step.

Document D1 (cf. abstract and Figure 3) discloses a telecommunication device with electronic scanning arrays, including alignments of the radiating

sources, arranged along a conical surface of revolution, wherein the surface of each radiating source is a function of the distance between the source and the apex of the conical surface.

Document **D4** discloses a radiating structure with scanning arrays including a first and second array of sources, arranged along rotationally symmetrical surfaces positioned on top of each other, in order to operate around a first and second central frequency. The sources are arranged such that the first sources do not cover the radiating surfaces of the second array of sources (column 1, lines 57-60).

The technical features described in Claims 2-4 are known from **D1** (see Figure 3). The subject matter of Claim 5 is anticipated by **D4**. As for Claim 8, positioning two radiating sources operating at different frequencies on top of each other, "the first and second sources being arranged in such a way that they are not opposite each other" is only one of the obvious possibilities that a person skilled in the art could select, according to the teaching of **D4**, for positioning the first and second sources such that they do not cover the radiating surfaces of the second array of sources.

Claims 6, 7 and 9 merely contain construction modifications that are part of standard practice for a person skilled in the art.



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A43B 23/17, C09J 7/00	A1	(11) International Publication Number: WO 00/41585 (43) International Publication Date: 20 July 2000 (20.07.00)
(21) International Application Number: PCT/GB99/04103 (22) International Filing Date: 6 December 1999 (06.12.99) (30) Priority Data: 9900384.0 9 January 1999 (09.01.99) GB (71) Applicant (for all designated States except ES US): TEXON UK LIMITED [GB/GB]; 100 Ross Walk, Belgrave, Leicester LE4 5BX (GB). (71) Applicant (for ES only): TEXON MATERIALES, S.L. [ES/ES]; Apartado 21083, Ramon Turró, 109-4a Planta, E-08005 Barcelona (ES). (72) Inventor; and (75) Inventor/Applicant (for US only): ARNOLD, Brian [GB/GB]; 43 Orchard Way, Syston, Leicester LE7 2AL (GB). (74) Agent: GILDING, Martin, J.; Eric Potter Clarkson, Park View House, 58 The Ropewalk, Nottingham NG1 5DD (GB).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: SHOE STIFFENER, MATERIAL AND METHOD FOR MAKING SAME AND METHOD OF INCORPORATING A SHOE STIFFENER INTO A SHOE UPPER COMPONENT		
(57) Abstract <p>A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 8000 Pas and wherein at least one of said layers of sheet materials has openings therein in a size range from, 0.15 mm² to 5 mm². A method of making the material is also described together with its use as a shoe stiffener. When incorporating the stiffener into a shoe, pressure exerted may cause some of the stiffener composition to flow through the openings and bond the stiffener to an adjacent shoe upper component.</p>		

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BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

**SHOE STIFFENER, MATERIAL AND METHOD FOR MAKING
SAME AND METHOD OF INCORPORATING A SHOE
STIFFENER INTO A SHOE UPPER COMPONENT**

5 Technical Field

This invention is concerned with a shoe stiffener, a sheet material suitable for use in the manufacture of same, a method of making such a material and a method of incorporating a shoe stiffener into a shoe upper.

10

Background Art

The term "shoe" where used herein is to be understood as denoting outer footwear generally whether ready for wear or in the course of
15 manufacture.

It is well known to incorporate shoe stiffeners in shoes to retain the shoe in a desired shape. For example shoe stiffeners are commonly included in the toe region of a shoe upper frequently referred to as "toe puffs" and in
20 the heel end region of a shoe upper, commonly referred to as heel end stiffeners or counters.

A variety of materials have been proposed for providing such shoe stiffeners and commonly comprising polymeric materials which can be
25 rendered relatively soft and pliable so that the shoe stiffener can be readily shaped to a desired shape but which can thereafter become relatively rigid and stiff thus to provide a shape retaining means for the shoe upper. Such polymeric materials have been applied in a variety of ways including impregnation of a suitable polymeric material into a textile fabric (woven

or non-woven), the impregnated fabric being softenable by heating and bonded to the shoe upper by application of a suitable adhesive layer (such stiffeners are supplied by the applicant company under the Registered Trade Mark "Tufflex" and "Formo"). It has also been proposed to apply
5 polymeric material directly to a shoe upper component by coating the polymeric material onto the component using a suitable applicator. It has further been proposed to provide shoe stiffeners consisting of a sheet of thermoplastic polymeric material which can be rendered pliable and adhesive by heating to an appropriate temperature: such a shoe stiffener is
10 described in European Patent No. 0183912.

For the manufacture of certain types of shoe it would be desirable to provide a shoe stiffener which can be first heated to a temperature sufficient that the stiffener becomes pliable and adhesive but which can
15 nevertheless be manipulated comfortably by hand without sticking to or burning the fingers of an operator but such a stiffener has not been satisfactorily provided heretofore.

It is one of the various objects of the present invention to provide an
20 improved material suitable for use in the manufacture of a shoe stiffener.

Another object of the present invention is to provide an improved shoe stiffener.

25 Yet a further object of the present invention is to provide an improved method of incorporating a shoe stiffener with a shoe upper component.

Disclosure of Invention

In one aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a layer of a stiffener composition between two layers of sheet material the stiffener composition including a polymeric material which is stiff at ambient temperature and is pliable, adhesive and flowable under pressure at an elevated temperature and at least one of the layers of sheet material having openings therein of such a size that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.

In another aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².

Size ranges where referred to herein refer to linear dimensions; thus the areas of the openings in said layer of sheet material range, approximately between about 0.02 sq mm and 25 sq mm.

In a preferred material in accordance with the invention the elevated temperature is in the range from 60°C to 80°C, more preferably about

75°C to 80°C.

Preferably the melt viscosity of the polymeric material in a material according to the invention at 100°C is in the range from 900 Pas to 2500 Pas, more preferably about 1500 Pas. The viscosity of the stiffener composition is preferably not more than 10,000 PaS. Viscosity is conveniently measured by a capillary rheometer at low shear on an instrument such as a Rosand capillary rheometer.

- 10 In a preferred material in accordance with the invention the openings in said layer of sheet material have a size range from 0.3 mm² to 1.5 mm² (opening areas between about 0.09 sq. mm and 2.25 sq mm).

In one embodiment the size range is about 0.5 mm² (area about 0.25 sq mm); in another embodiment the size of the openings is about 0.4 mm x 0.95 mm (area about 0.38 sq. mm). The sizes of the openings can be measured in any convenient way. For example, for rectangular openings in a woven scrim, the length and breadth of a number of openings can be determined under a microscope and an average taken to calculate an average opening area. More irregular openings eg. in an apertured non-woven fabric can be measured by producing an enlarged image of the fabric, using a planimeter to measure the area and correcting to take account of the magnification.

- 25 Preferably a sheet material in accordance with the invention has a thickness from 0.4mm up to 2.00mm, more preferably from 0.7mm up to 1.2mm.

Whereas the layer of stiffener composition of a material in accordance

with the invention may consist solely of a polymeric material, the stiffener composition preferably comprises a mixture of a polymeric material and a particulate filler. The use of a suitable filler can enhance the rigidity of the stiffener composition when cold. Suitably, the stiffener composition in
5 a material in accordance with the invention comprises between 85% and 30% by weight of polymeric material and 15% and 70% by weight of particulate filler; however, preferably the filler content does not exceed 50%. The polymeric material may, if desired, comprise a mixture of different polymers and the filler may comprise a mixture of particulate
10 fillers.

When a particulate filler is used in a stiffener composition of a material in accordance with the invention, the particle size of the filler should be in a suitable size range, preferably between 50 microns and 500 microns and
15 more preferably between 100 microns and 400 microns.

Polymeric materials are often mixed with fillers and many of the fillers which are commonly used for compounding with polymeric materials may be suitable for use in a stiffener composition in a material in accordance
20 with the invention. Amongst the most suitable materials are mica and talc.

The layers of sheet material between which the stiffener composition is carried may be provided by any suitable sheet material. Amongst suitable
25 materials are woven or knitted fabrics, and apertured non-woven fabric.

The sheet material chosen for use in the manufacture of material in accordance with the invention will depend on the viscosity of the polymeric material and the size of the openings in the sheet material. It

will be appreciated that if the openings are too small the polymeric material will not be able to flow through the openings to bond to the adjacent shoe upper component whereas if the openings are too large this can lead to difficulties when handling the hot shoe stiffener materials. A
5 textile fabric of a type commonly referred to as scrim may be suitable. Some melt bonded fabrics may also be suitable, for example the fabric supplied under the trade name "Reemay". Warp-knitted fabrics may also be particularly useful. Textile fibres which may be used in a suitable textile fabric include cotton, cotton/polyester blends, polyester and nylon
10 fibres.

Preferred polymeric materials suitable for use in stiffener composition of materials in accordance with the invention include polycaprolactone and poly(tetramethylene-adipate).

15

In another aspect the invention may be considered to provide a shoe stiffener comprising a material in accordance with the invention.

In yet another aspect the invention may be considered to provide a method
20 of making a material in accordance with the invention, the method comprising:

- (a) procuring two layers of sheet material, at least one having openings therein
- (b) introducing a layer of a stiffener composition between the
25 layers of sheet material and
- (c) treating the layers to cause them to adhere to one another without the stiffener composition leaking through the openings.

Preferably, in a method as set out in the last preceding paragraph, the

layer of stiffener composition is introduced in step (b) by extruding molten stiffener composition and, in step (c), the layers are treated by pressing and cooling.

- 5 In yet another aspect the invention may be considered to provide a method of incorporating a shoe stiffener with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face contact with the upper component, before or after said positioning heating the stiffener to such an extent that the
- 10 polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition through said openings, shaping the upper component and contacting
- 15 stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.
- 20 There now follow detailed descriptions to be read with reference to the accompanying drawing of shoe stiffeners and sheet materials embodying the invention, a method of making the stiffeners and a method of incorporating them into a shoe, also embodying the invention. It will be realised that the materials, stiffeners and methods have been selected for
- 25 description to illustrate the invention by way of example.

Brief Description of Drawing

In the accompanying drawing:-

Figure 1 is a diagrammatic view showing the incorporation of a shoe stiffener embodying the invention into a shoe upper.

Modes for Carrying Out the Invention

5

In Figure 1 an illustrative shoe stiffener 10 embodying the invention is shown positioned between two shoe upper components, namely an outer integument 12 of the upper and a lining material 14. The illustrative shoe stiffener 10 is a shoe counter and the counter 10 is within a counter pocket
10 formed by stitching the periphery of the lining material 14 to the outer integument 12 of the upper in known manner.

The outer integument 12 may be any suitable material, for example leather. The lining material 14 may be a suitable known lining material,
15 for example the non-woven impregnated textile fibre based material supplied by the applicant company under the trade mark Aquiline.

The illustrative shoe stiffener is cut, in known manner from a sheet of material embodying the invention in its material aspects.

20

The illustrative shoe stiffeners comprise a first layer 16 of sheet material and a second layer 18 of sheet material. Between the layers 16, 18 is a layer 22 of a stiffener composition which includes a polymeric material that is stiff at ambient temperature and is pliable, adhesive and flowable
25 under pressure at an elevated temperature. The polymer is polycaprolactone which becomes pliable adhesive and flowable under pressure at a temperature of about 80°C. The stiffener composition further comprises a mica particulate filler having a particle size in the range of 0.05mm to 0.25mm which is present in an amount of about 25 %

by weight, the polycaprolactone being present in an amount of about 75% by weight.

In the first illustrative stiffener both layers 16, 18 are cotton textile fibre woven scrims having openings 20 therein each opening having an area of about 0.5 mm² and being generally rectangular in shape.

A second illustrative stiffener, otherwise similar to the first illustrative stiffener, uses sheet material for the layers 16, 18 which is a woven polyester scrim having openings 20 which are about 0.4 mm x 0.95 mm (area about 0.38 sq mm).

The illustrative materials are made by hot-melt extruding the layer 22 of stiffener composition between the two layers 16, 18 of sheet material and rapidly cooling the laminated material by passing it through the nip between a pair of cooled calendar rolls of a calendar roll stack about which the laminated material is passed. The pressure applied by the rolls is relatively light - sufficient to cause the outer layers 16, 18 to bond to the stiffener composition 22 but not sufficient for the material of the stiffener composition 22 to be expelled through the openings 20 in the layers 16, 18.

The thus made laminated stiffener material is rolled onto a reel. When it is wished to make illustrative shoe stiffeners, the laminated material is unrolled from the reel and stiffeners are cut from the laminated material using cutting knives in a manner which is generally well known to those skilled in the art.

When it is wished to incorporate one of the illustrative shoe counters into

the heel end region of a shoe, a counter pocket is first made on the shoe upper by stitching the lining material 14 to the outer integument 12 of the shoe upper to provide a pocket into which the illustrative shoe counter may be placed when it has been activated.

5

In carrying out the illustrative method, the counter 10 is first heated to an elevated temperature sufficiently high that the stiffener composition 22 becomes pliable, tacky and flowable under pressure. A suitable temperature is about 80-85°C. The stiffener composition does not flow
10 through the holes 20 until it is subjected to significant pressure and the fabric layers 16, 18 provide a barrier so that the shoe counter 10 can be handled comfortably by an operator when hot; the relatively low thermal conductivity of the fabric also assists in this respect.

15 In this hot and pliable condition the shoe counter 10 is introduced into the counter pocket between the outer integument 12 and the lining material 14. The shoe upper, including the counter, is then subjected to a lasting operation which shapes the shoe upper around a last and the upper is retained in this shaped condition until the stiffener composition has cooled
20 below its activation temperature and solidified to a rigid condition.

During the lasting operation considerable pressure is exerted on the shoe upper and the exerted pressure is sufficient to cause sufficient of the polymeric material in the stiffener composition 22 to be expelled through
25 the openings 20 in the layers 16, 18. This expelled material 24 is forced firmly into engagement with the adjacent one of the layers 16, 18 whilst still in a tacky adhesive condition and may spread sideways from the openings 20 between the layers 16, 18 and the adjacent one of the upper components 12, 14. When the stiffener composition is cooled, the

material 24 which has been expelled through the openings 20 bonds the counter 10 firmly to the upper components 12, 14 providing a relatively rigid and shape-retaining back part to the shoe upper.

- 5 Those skilled in the art will be aware that it is common practice to skive the margins of shoe counters to provide a tapering (or skived) edge portion which permits the counter to blend with the upper component without uncomfortable and unsightly ridges in the shoe upper.
- 10 The illustrative shoe counters as well as being readily mouldable and self-adhesive have a relatively high modulus so that the counter material is relatively thin (for a particular stiffness) and thus this, in some cases, may allow the illustrative counters to be used without skiving. This may be assisted by the relatively flowable nature of the stiffener composition 22
- 15 under lasting pressures which will tend to flow away from the edge portions (at which pressures may tend to be greatest) and towards a central region of the counter where greatest stiffness is required.

The layers 16, 18 of the illustrative counters 10 also provide

20 reinforcement of the counter against tensile forces which, in the absence of the layers 16, 18, may be resisted less adequately.

Whereas in carrying out the illustrative method of incorporating the illustrative counters 10 in a shoe, the shoe counter 10 is first heated and

25 activated so that the stiffener composition 22 is in a pliable tacky and flowable condition before introduction into the counter pocket, the illustrative counters 10, in carrying out another method of incorporating the counters in a shoe in accordance with the invention, may be introduced into a counter pocket whilst cold and the whole shoe heated until the

stiffener composition 22 reaches activation temperature, the shoe thereafter being lasted.

Whereas the illustrative shoe counters 10 have layers 16, 18 on both sides which have openings 20 therein, in the manufacture of a counter in accordance with the invention, only one of the layers 16, 18 may be provided with openings and the other layer may be substantially continuous. This continuous layer may be a shoe lining material of a type known to those skilled in the art, for example Aquiline mentioned previously. In that case the stiffener would probably not be handled hot and it would be necessary to temporarily attach the counter to the shoe upper by other means, for example stitching or a tacking adhesive with the layer having the openings 20 adjacent the outer integument of the shoe upper, either before or after activation of the stiffener composition, and then the shoe lasted as described previously.

Whereas the preferred shoe stiffener materials are made by extruding the stiffener composition between two layers 16, 18, it will be appreciated that the stiffener composition may be introduced in other ways, for example a pre-extruded sheet may be positioned between two fabric layers and laminated thereto by applying slight heat and pressure (sufficient to adhere the fabric layers to the stiffener composition but not sufficiently great to cause the stiffener composition to flow through openings in the fabric). Other methods may also be suitable.

25

CLAIMS

1. A material suitable for use in the manufacture of a shoe stiffener consisting of a layer of a stiffener composition between two layers of sheet material the stiffener composition including a polymeric material which is stiff at ambient temperature and is pliable, adhesive and flowable under pressure at an elevated temperature and at least one of the layers of sheet material having openings therein of such a size that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.
2. A material according to claim 1 wherein said elevated temperature is between 50°C and 90°C, the openings have a size range from 0.15 mm² to 5 mm² and the melt viscosity of the polymeric material measured at 100°C is in the range from 100 PAS to 10,000 Pas.
3. A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².
4. A material according to either one of claims 2 and 3 wherein the

elevated temperature is in the range from 60°C to 80°C.

5 5. A material according to any one of claims 2 to 4 wherein the melt viscosity of the polymeric material at 100°C is in the range from 900 Pas to 2500 Pas.

6. A material according to any one of claims 2 to 5 wherein the openings have a size range from 0.3 mm² to 1.5 mm².

10 7. A material according to any one of the preceding claims wherein the shoe stiffener material is from 0.4mm up to 2.00mm in thickness.

8. A material according to any one of the preceding claims wherein the stiffener composition comprises between 85% and 30% by weight of
15 said polymeric material and 15% and 70% by weight of particulate filler.

9. A material according to claim 8 wherein the particulate filler has a size between 50 microns and 500 microns.

20 10. A material according to claim 9 wherein the size of the particulate filler is between 100 microns and 400 microns.

11. A shoe material according to any one of claims 8 to 10 wherein the filler is mica.

25

12. A material according to any one of claims 8 to 10 wherein the filler is talc.

13. A material according to any one of the preceding claims wherein

the polymeric material comprises polycaprolactone.

14. A material according to any one of claims 1 to 12 wherein the polymeric material comprises poly(tetramethylene-adipate).

5

15. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a woven fabric.

16. A material according to any one of the preceding claims wherein at
10 least one of said layers of sheet material is a knitted fabric.

17. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is an apertured non-woven fabric.

15 18. A shoe stiffener comprising a material in accordance with any one of the preceding claims.

19. A method of making a material according to any one of the claims 1 to 17 comprising

20 (a) procuring two layers of sheet material, at least one having openings therein

(b) introducing a layer of a stiffener composition between the layers of sheet material and

(c) treating the layers to cause them to adhere to one another
25 without the stiffener composition leaking through the openings.

20. A method according to claim 19 wherein the layer of stiffener composition is introduced in step (b) by extruding it and in step (c) the layers are treated by pressing and cooling.

21. A method of incorporating a shoe stiffener according to claim 18 with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face
5 contact with the upper component, before or after said positioning heating the stiffener to such an extent that the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from
10 the layer of stiffener composition through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

1/1

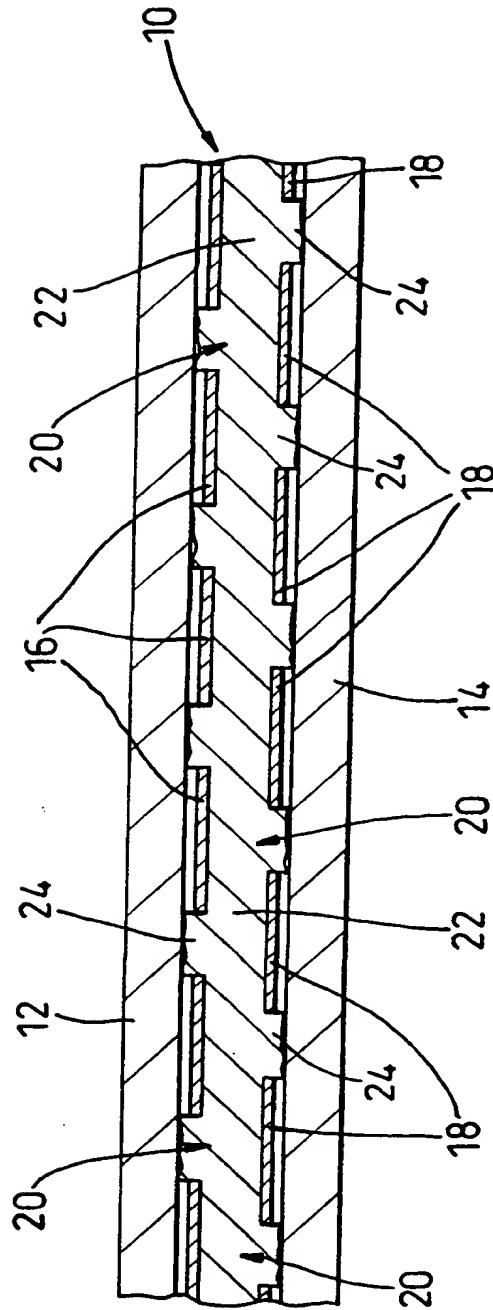


Fig. 1

5 In one aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a layer of a stiffener composition between two layers of sheet material the stiffener composition including a polymeric material which is stiff at ambient temperature and is pliable, adhesive and flowable under pressure at an elevated temperature and at least one of the layers of sheet material having openings therein of such a size that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.

15 In another aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 20 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².

25 Size ranges where referred to herein refer to linear dimensions; thus the areas of the openings in said layer of sheet material range, approximately between about 0.02 sq mm and 25 sq mm.

In a preferred material in accordance with the invention the elevated temperature is in the range from 60°C to 80°C, more preferably about

CLAIMS

1. A material suitable for use in the manufacture of a shoe stiffener consisting of a layer of a stiffener composition between two layers of sheet material the stiffener composition including a polymeric material which is stiff at ambient temperature and is pliable, adhesive and flowable under pressure at an elevated temperature and at least one of the layers of sheet material having openings therein of such a size that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.
2. A material according to claim 1 wherein said elevated temperature is between 50°C and 90°C, the openings have a size range from 0.15 mm² to 5 mm² and the melt viscosity of the polymeric material measured at 100°C is in the range from 100 PAS to 10,000 Pas.
3. A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².
4. A material according to either one of claims 2 and 3 wherein the

elevated temperature is in the range from 60°C to 80°C.

5 5. A material according to any one of claims 2 to 4 wherein the melt viscosity of the polymeric material at 100°C is in the range from 900 Pas to 2500 Pas.

6. A material according to any one of claims 2 to 5 wherein the openings have a size range from 0.3 mm² to 1.5 mm².

10 7. A material according to any one of the preceding claims wherein the shoe stiffener material is from 0.4mm up to 2.00mm in thickness.

15 8. A material according to any one of the preceding claims wherein the stiffener composition comprises between 85% and 30% by weight of said polymeric material and 15% and 70% by weight of particulate filler.

9. A material according to claim 8 wherein the particulate filler has a size between 50 microns and 500 microns.

20 10. A material according to claim 9 wherein the size of the particulate filler is between 100 microns and 400 microns.

11. A shoe material according to any one of claims 8 to 10 wherein the filler is mica.

25

12. A material according to any one of claims 8 to 10 wherein the filler is talc.

13. A material according to any one of the preceding claims wherein

the polymeric material comprises polycaprolactone.

14. A material according to any one of claims 1 to 12 wherein the polymeric material comprises poly(tetramethylene-adipate).

5

15. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a woven fabric.

16. A material according to any one of the preceding claims wherein at
10 least one of said layers of sheet material is a knitted fabric.

17. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is an apertured non-woven fabric.

15 18. A shoe stiffener comprising a material in accordance with any one of the preceding claims.

19. A method of making a material according to any one of the claims 1 to 17 comprising

20 (a) procuring two layers of sheet material, at least one having openings therein

(b) introducing a layer of a stiffener composition between the layers of sheet material and

(c) treating the layers to cause them to adhere to one another
25 without the stiffener composition leaking through the openings.

20. A method according to claim 19 wherein the layer of stiffener composition is introduced in step (b) by extruding it and in step (c) the layers are treated by pressing and cooling.

21. A method of incorporating a shoe stiffener according to claim 18 with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face
5 contact with the upper component, before or after said positioning heating the stiffener to such an extent that the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from
10 the layer of stiffener composition through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference TEXE/P22039PC	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 99/ 04103	International filing date (day/month/year) 06/12/1999	(Earliest) Priority Date (day/month/year) 09/01/1999
Applicant TEXON UK LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the International search was carried out on the basis of the International application in the language in which it was filed, unless otherwise indicated under this item.

☐ the International search was carried out on the basis of a translation of the International application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the International application, the International search was carried out on the basis of the sequence listing:

☐ contained in the International application in written form.

☐ filed together with the International application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the International application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

P/GB 99/04103

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A43B23/17 C09J7/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A43B B29D A43D C09J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 973 284 A (NEWTON ALBERT E ET AL) 10 August 1976 (1976-08-10)	1,2,7, 18,20
X	the whole document	19,21
X	US 4 308 673 A (MOEBIUS OLAF) 5 January 1982 (1982-01-05)	19,21
A	the whole document	1,4,18
A	US 3 950 864 A (COOPER III HENRY E ET AL) 20 April 1976 (1976-04-20)	1,2,18
	claims	
A	EP 0 183 912 A (GIULINI CHEMIE) 11 June 1986 (1986-06-11)	1,9,10, 13,18
	cited in the application	
	the whole document	
	—	
	—/—	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier document but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
 "&" document member of the same patent family

Date of the actual completion of the international search

25 February 2000

Date of mailing of the international search report

06/03/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Claudel, B

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/04103

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 38060 A (USM ESPANA SA ;BRITISH UNITED SHOE MACHINERY (GB); ARNOLD BRIAN (G) 16 October 1997 (1997-10-16) the whole document	1,11,12,18
A	US 5 667 857 A (INOBUCHI HIROKAZU ET AL) 16 September 1997 (1997-09-16) the whole document	1,15-18
A	US 4 080 680 A (CHAPLICK ADOLPH MICHAEL) 28 March 1978 (1978-03-28) the whole document	1-3,18

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/04103

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3973284	A	10-08-1976	AU 7344274 A CA 1045016 A DE 2444862 A ES 430409 A FR 2244614 A IT 1022157 B JP 50088191 A ZA 7405953 A	25-03-1976 26-12-1978 03-04-1975 01-10-1976 18-04-1975 20-03-1978 15-07-1975 25-02-1976
US 4308673	A	05-01-1982	DE 2828509 A DE 7819462 U BR 7904123 A CA 1125111 A DK 273879 A ES 480433 A GB 2024279 A,B JP 55005698 A PT 69849 A US 4388768 A ZA 7903248 A	10-01-1980 01-02-1979 25-03-1980 08-06-1982 30-12-1979 16-11-1979 09-01-1980 16-01-1980 01-07-1979 21-06-1983 25-06-1980
US 3950864	A	20-04-1976	US 3918182 A	11-11-1975
EP 0183912	A	11-06-1986	US 4717496 A AT 46529 T AU 571348 B AU 4660285 A BR 8506015 A DE 3526102 A ES 548219 A HU 41247 A JP 1971988 C JP 6094537 B JP 61133267 A KR 9404858 B PL 256582 A PT 81587 A,B ZA 8506346 A ZA 8602039 A CS 8506168 A SU 1834894 A	05-01-1988 15-10-1989 14-04-1988 12-06-1986 19-08-1986 05-06-1986 16-01-1987 28-04-1987 27-09-1995 24-11-1994 20-06-1986 02-06-1994 09-03-1987 01-01-1988 30-04-1986 26-11-1986 12-02-1990 15-08-1993
WO 9738060	A	16-10-1997	CN 1215424 A EP 0892837 A	28-04-1999 27-01-1999
US 5667857	A	16-09-1997	JP 2567828 B JP 5147146 A US 5560985 A DE 69225017 D DE 69225017 T EP 0507322 A	25-12-1996 15-06-1993 01-10-1996 14-05-1998 15-10-1998 07-10-1996
US 4080680	A	28-03-1978	DD 131899 A DE 2727015 A ES 460644 A FR 2356497 A IT 1086157 B JP 53006147 A	09-08-1978 12-01-1978 01-12-1978 27-01-1978 28-05-1985 20-01-1978

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

P/GB 99/04103

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4080680 A		US 4151155 A ZA 7703987 A	24-04-1979 27-12-1978

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

To:

GILDING, MARTIN J.
ERIC POTTER CLARKSON
Park View House
58 The Ropewalk
Nottingham NG1 5DD
GRANDE BRETAGNE

Date of mailing
(day/month/year) 01.02.2001

Applicant's or agent's file reference
TEXE/P22039PC

IMPORTANT NOTIFICATION

International application No.
PCT/GB99/04103

International filing date (day/month/year)
06/12/1999

Priority date (day/month/year)
09/01/1999

Applicant
TEXON UK LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.


4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Ghellere, M

Tel. +49 89 2399-2053



PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

GILDING, MARTIN J.
ERIC POTTER CLARKSON
Park View House
58 The Ropewalk
Nottingham NG1 5DD
GRANDE BRETAGNE

NOTIFICATION OF RECEIPT OF DEMAND BY COMPETENT INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rules 59.3(e) and 61.1(b), first sentence
and Administrative Instructions, Section 601(a))

Date of mailing
(day/month/year)

11.07.00

Applicant's or agent's file reference

TEXE/P22039PC

IMPORTANT NOTIFICATION

International application No.

PCT/GB 99/04103

International filing date (day/month/year)

06/12/1999

Priority date (day/month/year)

09/01/1999

Applicant

TEXON UK LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

21/06/2000

2. This date of receipt is:

- ☒ the actual date of receipt of the demand by this Authority (Rule 61.1(b)).
☐ the actual date of receipt of the demand on behalf of this Authority (Rule 59.3(e)).
☐ the date on which this Authority has, in response to the invitation to correct defects in the demand (Form PCT/IPEA/404), received the required corrections.

3. ☐ **ATTENTION:** That date of receipt is **AFTER** the expiration of 19 months from the priority date. Consequently, the election(s) made in the demand does (do) not have the effect of postponing the entry into the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)). Therefore, the acts for entry into the national phase must be performed within 20 months from the priority date (or later in some Offices) (Article 22). For details, see the *PCT Applicant's Guide*, Volume II.

- ☐ (If applicable) This notification confirms the information given by telephone, facsimile transmission or in person on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

Name and mailing address of the IPEA/

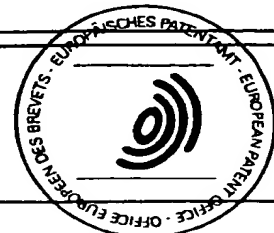


European Patent Office
D-80298 Munich
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Fax: (+49-89) 2399-4465

Authorized officer

BENZLER A

Tel. (+49-89) 2399-8727



PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date.

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

TEXE / P22039PC

Box No. I	TITLE OF INVENTION SHOE STIFFENER, MATERIALS AND METHOD FOR MAKING SAME AND METHOD OF INCORPORATING A SHOE STIFFENER INTO A SHOE UPPER COMPONENT	
Box No. II	APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Texon UK Limited 100 Ross Walk Belgrave Leicester LE4 5BX United Kingdom		<input type="checkbox"/> This person is also inventor. Telephone No. Facsimile No. Teleprinter No.
State (that is, country) of nationality: GB		State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input checked="" type="checkbox"/> the States indicated in the Supplemental Box		
Box No. III	FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Texon Materiales, S.L. Apartado 21083 Ramon Turró 109-4a Planta Barcelona E-08005 Spain		This person is: <input checked="" type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)
State (that is, country) of nationality: ES		State (that is, country) of residence: ES
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input checked="" type="checkbox"/> the States indicated in the Supplemental Box		
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.		
Box No. IV	AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:		<input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Gilding, Martin J Eric Potter Clarkson Park View House 58 The Ropewalk Nottingham. NG1 5DD GB		Telephone No. (0115) 9552211 Facsimile No. (0115) 9552201 Teleprinter No. 37540 Potter G
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.		

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p> <p>ARNOLD, Brian 43 Orchard Way Syston Leicester LE7 2AL United Kingdom</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input checked="" type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated states <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated states <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated states <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated states <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p>Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)</p>
State (that is, country) of nationality:	State (that is, country) of residence:
<p>This person is applicant for the purposes of: <input type="checkbox"/> all designated states <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box</p>	
<p><input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.</p>	

Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes, at least one must be marked):

Regional Patent

- ☒ **AP** **ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA** **Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP** **European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA** **OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BG Bulgaria | |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> M Malawi |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> RU Russian Federation |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> ES Spain | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SI Slovenia |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> SK Slovakia |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TJ Tajikistan |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> US United States of America |
| <input checked="" type="checkbox"/> IS Iceland | |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> ZA South Africa |
| | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakhstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- | | |
|--|--|
| <input checked="" type="checkbox"/> CR Costa Rica | <input checked="" type="checkbox"/> MA Morocco |
| <input checked="" type="checkbox"/> DM Dominica | <input checked="" type="checkbox"/> TZ Tanzania |

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Supplemental Box If the Supplemental Box is not used, this sheet should not be included in the request.

1. If, in any of the Boxes, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No. ..." [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

(i) if more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;

(ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;

(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;

(iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;

(v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;

(vi) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI;

(vii) if, in Box No. VI, the earlier application is an ARIPO application: in such case, write "Continuation of Box No. VI", specify the number of the item corresponding to that earlier application and indicate at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed.

2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write, "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.

3. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty: in such case, write "Statement concerning non-prejudicial disclosures or exceptions to lack of novelty" and furnish that statement below.

Continuation of Box No. III

Texon UK Limited

Applicant for all states except US and Spain.

Texon Materiales, S.L.

Applicant for the purposes of Spain and EP (ES) only.

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claim(s) indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		National application: Country	regional application:* regional Office	international application: receiving Office
item (1) 9 January 1999 (09/01/1999)	9900384.0	GB		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY	
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA /	Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year) Number Country (or regional Office)

Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 5 description (excluding sequence listing part) : 12 claims : 4 abstract : 1 drawings : 1 sequence listing part of description : 0 Total number of sheets : 23	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): Form 23/77
Figure of the drawings which should accompany the abstract: 1	Language of filing of the International application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).	
Martin J Gilding	

For receiving Office use only		2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:		
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

For International Bureau use only	
Date of receipt of the record copy by the International Bureau:	

PCT

For receiving Office use only

FEE CALCULATION SHEET Annex to the Request

International application No.

Applicant's or agent's
file reference

TEXE / P22039PC

Date stamp of the receiving Office

Applicant

Texon UK Limited and Texon Materiales, S.L.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE 55 T

2. SEARCH FEE 638 S

International search to be carried out by _____
(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee

The international application contains 23 sheets.

first 30 sheets 285 b1

0 x 6 = 0 b2

remaining sheets additional amount

Add amounts entered at b1 and b2 and enter total at B 285 B

Designation Fees

The international application contains 83 designations.

10 x 65 = 650 D

number of designation fees payable (maximum 10) amount of designation fee

Add amounts entered at B and D and enter total at I 935 I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT (if applicable) 22 P

5. TOTAL FEES PAYABLE 1650

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

TOTAL

☐ The designation fees are not paid at this time.

MODE OF PAYMENT

☐ authorization to charge
deposit account (see below)

☐ bank draft

☐ coupons

☒ cheque

☐ cash

☐ other (specify):

☐ postal money order

☐ revenue stamps

DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ ☐ is hereby authorized to charge the total fees indicated above to my deposit account.

☐ (this check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☐ is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

Deposit Account No.

Date (day/month/year)

Signature

The Patent Office

Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

**Request for a certificate of the
Comptroller or a certified or uncertified
copy from a file or the register**

(See the notes on the back of this form)

1. Your reference	TEXE / P22039PC
2. Patent application or patent number(s) <i>(see notes (c) & (d))</i>	9900384.0
3. Full name of the or of each patent applicant or proprietor <i>(if known)</i>	Texon UK Limited and Texon Materiales, S.L.
4. What do you want a copy of? <i>(see note (f))</i>	ii
5. How many copies do you need?	1
6. State the type of certificate you want <i>(see note (g))</i> and if it is needed to support applications made outside the United Kingdom, list the countries concerned <i>(see notes (j) & (k))</i>	CERTIFIED WITH SIGNATURE AND SEAL.
7. Name, address and postcode of the or of each person making the request <i>(see note (b))</i>	ERIC POTTER CLARKSON PARK VIEW HOUSE 58 THE ROPEWALK NOTTINGHAM NG1 5DD
8. Name, address and postcode of the or of each person certificates or copies should be sent to <i>(if different from that given in part 6 above)</i> <i>(see note (i))</i>	SEND TO THE INTERNATIONAL UNIT AS PRIORITY DOCUMENT FOR PCT APPLICATION
9.	Signature Date
	ERIC POTTER CLARKSON 3 December 1999
10. Name and daytime telephone number of person to contact in the United Kingdom	0115 9552211

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT


(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TEXE/P22039PC	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB99/04103	International filing date (day/month/year) 06/12/1999	Priority date (day/month/year) 09/01/1999	
International Patent Classification (IPC) or national classification and IPC A43B23/17			
Applicant TEXON UK LIMITED et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 21/06/2000	Date of completion of this report 01.02.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Herry-Martin, D Telephone No. +49 89 2399 2060



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/04103

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1,2,4-12	as originally filed	
3	with telefax of	08/01/2001

Claims, No.:

1-17	with telefax of	08/01/2001
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Drawings, sheets:

1/1	as originally filed
-----	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/04103

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-17
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-17
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-17
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The invention starts from the document US-A-3 973 284.

The aim of the invention is to provide a material suitable for use in the manufacture of a shoe stiffener, a shoe stiffener, and a method of incorporating a shoe stiffener, in order to provide a shoe stiffener which can be first heated but which nevertheless can be manipulated comfortably by hand without sticking to or burning the fingers of an operator.

This aim is achieved in that the shoe stiffener consists of a stiffener composition between two layers of sheet material, at least one of said layers of sheet material having openings, and in that the method comprises the step of positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face contact with the upper component, and of pressing the stiffener against the upper component to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition through said openings.

Claim 1 is based on originally filed claim 3 and claim 17 on a combination of originally filed claims 21 and 3.

No document of the state of the art presents these features. US-A-3 973 284 discloses applying the stiffener directly against the upper component, applying granules to the stiffener and pressing the granules in the direction of the upper in order to insure flow of stiffener up through the open spaces between the granules in the direction opposed to the upper, and not positioning a layer of sheet material with openings therein in face-to-face contact with the upper component. US-A-4 308 673 discloses a single layered fiber structure loaded or filled with at least one synthetic resin and applied against the upper component.

Re Item VII

Certain defects in the international application

1. The requirements of Rule 6.3 b) PCT are not fulfilled because the independent claims are not properly cast in the two part form, with those features which in combination are part of the prior art being placed in the preamble.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International appli

No. PCT/GB99/04103

2. The requirements of Rule 6.2(b) PCT are not fulfilled because the features of the claims are not provided with reference signs placed in parentheses.
3. The requirements of Rule 5.1(a)(ii) PCT are not fulfilled because the documents US-A-3 973 284 and US-A-4 308 673 are not identified in the description and the relevant background art disclosed in US-A-3 973 284 is not briefly discussed.
4. The expression "in another aspect" on page 3, first line, is not correct, because no "one" or "first" aspect of the invention has been afore-mentioned.

In another aspect the invention may be considered to provide a material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm² to 5 mm².

10

The polymeric material is flowable under pressure at said elevated temperature such that when the stiffener composition is heated to said elevated temperature the stiffener can be readily manipulated and positioned in a shoe upper and thereafter subjected to pressure to cause sufficient of the polymeric material to flow through the openings in the sheet material and adhere to adjacent shoe upper materials whereby to bond the stiffener in the shoe.

Size ranges where referred to herein refer to linear dimensions; thus the areas of the openings in said layer of sheet material range, approximately between about 0.02 sq mm and 25 sq mm.

In a preferred material in accordance with the invention the elevated temperature is in the range from 60°C to 80°C, more preferably about

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CLAIMS

1. A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material,
5 the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from
10 0.15 mm² to 5 mm².
2. A material according to claim 1 wherein the elevated temperature is in the range from 60°C to 80°C.
- 15 3. A material according to either one of claims 1 and 2 wherein the melt viscosity of the polymeric material at 100°C is in the range from 900 Pas to 2500 Pas.
4. A material according to any one of the preceding claims wherein
20 the openings have a size range from 0.3 mm² to 1.5 mm².
5. A material according to any one of the preceding claims wherein the shoe stiffener material is from 0.4mm up to 2.00mm in thickness.
- 25 6. A material according to any one of the preceding claims wherein the stiffener composition comprises between 85% and 30% by weight of said polymeric material and 15% and 70% by weight of particulate filler.
7. A material according to claim 6 wherein the particulate filler has a

size between 50 microns and 500 microns.

8. A material according to claim 7 wherein the size of the particulate filler is between 100 microns and 400 microns.

5

9. A material according to any one of claims 6 to 8 wherein the filler is mica.

10. A material according to any one of claims 6 to 8 wherein the filler is talc.

10

11. A material according to any one of the preceding claims wherein the polymeric material comprises polycaprolactone.

12. A material according to any one of claims 1 to 10 wherein the polymeric material comprises poly(tetramethylene-adipate).

15

13. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a woven fabric.

20

14. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a knitted fabric.

15. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is an apertured non-woven fabric.

25

16. A shoe stiffener comprising a material in accordance with any one of the preceding claims.

17. A method of incorporating a shoe stiffener according to claim 16 with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face contact with the upper component, before or after said positioning heating the stiffener to a temperature between 50°C and 90°C at which the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

PATENT COOPERATION TREATY

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INFORMATION CONCERNING ELECTED
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To: ON Comus	COMUS MN PARTNER 72	OFFICE
GILDING, Martin, JE Eric Potter Clarkson Park View House 58 The Ropewalk Nottingham NG1 5DD ROYAUME-UNI		
29 AUG 2000		NOTIFIED BY:

Date of mailing (day/month/year) 22 August 2000 (22.08.00)		
Applicant's or agent's file reference TEXE/P22039PC		
IMPORTANT INFORMATION		
International application No. PCT/GB99/04103	International filing date (day/month/year) 06 December 1999 (06.12.99)	Priority date (day/month/year) 09 January 1999 (09.01.99)
Applicant TEXON UK LIMITED et al		

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

AP : GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW
 EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
 National : AU, BG, BR, CA, CN, CZ, DE, IL, JP, KP, KR, MN, NO, NZ, PL, RO, RU, SE, SK, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 OA : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 National : AE, AL, AM, AT, AZ, BA, BB, BY, CH, CR, CU, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, PT, SD, SG, SI, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer: Juan Cruz Telephone No. (41-22) 338.83.38
--	--

PATENT COOPERATION TREATY

PARTNER

28 JUL 2000

OFFICE
PCT

From the INTERNATIONAL BUREAU

To:

GILDING, Martin, J.
Eric Potter Clarkson
Park View House
58 The Ropewalk
Nottingham NG1 5DD
ROYAUME-UNI

**NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

Date of mailing (day/month/year) 20 July 2000 (20.07.00)		IMPORTANT NOTICE	
Applicant's or agent's file reference TEXE/P22039PC			
International application No. PCT/GB99/04103	International filing date (day/month/year) 06 December 1999 (06.12.99)	Priority date (day/month/year) 09 January 1999 (09.01.99)	
Applicant TEXON UK LIMITED et al			

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
AU,CN,JP,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
**AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,GE,
GH,GM,HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,NO,NZ,
OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW**
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).
3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 20 July 2000 (20.07.00) under No. WO 00/41585

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. (41-22) 740.14.35</p>	<p>Authorized officer J. Zahra</p> <p>Telephone No. (41-22) 338.83.38</p>
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